This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~Procedure~~ A method for ~~the analysis of the~~analyzing access to a data communication network by a user ~~(LAN)~~, ~~characterised by the fact that it comprises~~comprising: ~~the operations of~~

tracing ~~(A1) the~~ traffic of said user ~~(LAN)~~ via a computer, and identifying a group of networks with which said traffic is mainly handled, by defining ~~(100)~~ relative autonomous systems ~~(AS)~~ and tracing the sequence of autonomous systems crossed by said traffic; the tracing ~~operation of said sequence~~ including:

- a first stage ~~(B1)~~, to provide ~~the~~ a list ~~(102)~~ of ~~the~~ paths of autonomous systems crossed by said traffic to reach each destination, and

- a second stage ~~(B2)~~, to aggregately elaborate said list of paths, outputting a tree representing all the paths of the autonomous systems crossed by the traffic of said user ~~(LAN)~~ to reach ~~all corresponding destinations~~each destination,

wherein said second stage comprises providing, in relation to the list of said autonomous systems crossed by said traffic of said user, at least one parameter including a percentage of use of the autonomous systems.

2. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that it comprises the operation of~~comprising determining the routing of said traffic on ~~the~~ branches of said tree, and ~~the operation of~~ associating ~~the~~ respective indicative values of the traffic that crosses ~~the branch to~~ the branches of said tree.

3. (Currently Amended) ~~Procedure~~ A method as per claim 1 ~~or claim 2~~, ~~characterised by the fact that it comprises the operation of~~comprising using hardware probes to trace the traffic of said user.

4. (Currently Amended) . ~~Procedure~~ A method as per claim 3, ~~characterised by the fact that it comprises the operation of~~comprising configuring said hardware probes to provide information selected ~~in~~from ~~the~~ a group ~~consisting of~~including: band use of ~~the~~ an individual link, data volume, protocol-subdivision, IP address-subdivision, traffic matrix between the user ~~(LAN)~~ and the network.

5. (Currently Amended) ~~Procedure~~ A method as per claim 3 ~~or claim 4~~, ~~characterised by the fact that it comprises the operation of~~comprising configuring said hardware probes to determine at least one ~~selected~~ item selected ~~in~~from ~~the~~ a group ~~consisting of~~including: sites most frequently visited by the user, main networks to which the user addresses ~~its~~ traffic, and the origin of who connects up to said user.

6. (Currently Amended) ~~Procedure~~ A method as per claim 1 ~~or claim 2~~, ~~characterised by the fact that it comprises the operation of~~comprising setting software agents on the data communication network access routers to trace said user traffic.

7. (Currently Amended) ~~Procedure~~ A method as per claim 6, ~~characterised by the fact that it comprises the operation of~~comprising configuring said software agents to trace the traffic through the interface of the router of said user to determine the main traffic lines.

8. (Currently Amended) ~~Procedure~~ A method as per claim 6, ~~characterised by the fact that it comprises the operation of~~comprising configuring said software agents to ~~analyse~~ analyze the operating status of the respective router in terms of CPU load and available memory.

9. (Currently Amended) ~~Procedure~~ A method as per claim 6, ~~characterised by the fact that it comprises the operation of~~comprising providing a target machine for the transfer of the statistics obtained by said routers.

10. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that it comprises the operation of~~ comprising generating, as the result of said traffic tracing operation of said user, at least one parameter selected from ~~the~~ a group ~~consisting of~~ including: destination networks of said traffic, percentage of traffic involved, and pertinent autonomous system.

11. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that~~ wherein said first stage ~~(B1)~~ comprises the operations of inputting a file containing the IP addresses representing the sites most frequently visited by said user and performing a traceroute function for each destination site, by tracing the path to reach ~~this~~ each destination site.

12. (Currently Amended) ~~Procedure~~ A method as per claim 11, ~~characterised by the fact that it comprises the operation of~~ comprising tracing said path as a sequence of autonomous systems ~~(AS)~~ crossed.

13. (Currently Amended) ~~Procedure~~ A method as per claim 11, ~~characterised by the fact that~~ wherein in said first stage said tracing operations are carried out repeatedly with a given frequency.

14. (Currently Amended) ~~Procedure~~ A method as per claim 13, ~~characterised by the fact that~~ wherein said frequency ~~can~~ is configured to be determined and selected.

15. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that~~ wherein said second stage ~~(B2)~~ comprises ~~the operation of~~ generating a unique tree of paths of the autonomous systems crossed by the traffic of said user to reach all the destinations, ~~the~~ wherein leaves of said tree ~~being~~ are indicative of ~~the~~ destination subnetworks of the traffic of said user.

16. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that~~ wherein ~~said second stage (B2) comprises the operation of providing, in relation to the list of said autonomous systems crossed by said traffic of said user,~~ the provided at least one parameter ~~from: the~~

~~percentage of use of the autonomous system,~~further includes at least one of a time value for passing through said autonomous systems and a hops value inside the autonomous system.

17. (Currently Amended) ~~Procedure~~A method as per claim 16, ~~characterised by the fact that~~wherein ~~at least one and preferable all~~said ~~data~~provided at least one parameter ~~are~~is expressed as an average value.

18. (Currently Amended) ~~Procedure~~A method as per claim 1 ~~or claim 11~~, ~~characterized by the fact that~~wherein said first stage ~~(B1)~~comprises the operation of invoking for each IP address generated via said ~~traceroute~~trace function, a remote service to obtain at least one item of ~~the~~information ~~included in the~~from a group ~~consisting of~~including: name of the autonomous system to which the generated IP address belongs and the number of the autonomous system to which said generated IP address belongs.

19. (Currently Amended) ~~Procedure~~A method as per claim 18, ~~characterised by the fact that~~wherein said remote service is the *whois* service of the databases RIBE, ARIN, APNIC.

20. (Currently Amended) ~~Procedure~~A method as per claim 1, ~~characterised by the fact that~~wherein said first stage ~~(B1)~~comprises ~~the operation of~~generating a data file ~~(103) comprising~~including information selected from ~~the~~a group ~~consisting of~~including:
    - order number of the autonomous system following the sequence of IP addresses provided by said ~~traceroute~~trace function,
    - text name of the autonomous system,
    - identification number of the autonomous system,
    - number of hops that a single tracing command has measured inside the autonomous system, and
    - time of permanence in the autonomous system measured by a single tracing command.

21. (Currently Amended) ~~Procedure~~ A method as per claim 1 ~~or claim 11, characterized by the fact that it comprises the operation of~~comprising performing a plurality of said tracing functions in parallel during said first stage.

22. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that~~wherein said second stage ~~(B2)~~ comprises ~~the operation of~~ storing information of correspondence between IP addresses and ~~the~~ data relating to the ~~pertinent~~ autonomous systems.

23. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that~~wherein said second stage ~~(B2)~~ comprises ~~the operation of~~ generating ~~the~~ leaves of said tree as an identification of ~~the~~ destination subnetworks of the traffic of said user and ~~the~~ relative branches as identifications of the autonomous systems crossed by the traffic.

24. (Currently Amended) ~~Procedure~~ A method as per claim 1, ~~characterised by the fact that~~wherein said second stage ~~(B2)~~ is performed in association with a central memory with a data structure that represents the paths generated in said first stage in the form of at least one aggregated list.

25. (Currently Amended) ~~Procedure~~ A method as per claim 24, ~~characterised by the fact that~~ ~~the~~wherein said at least one aggregated list is identified as representing a variable number of autonomous system lists that share a common maximum prefix.

26. (Currently Amended) ~~System~~ An apparatus for ~~the analysis of the~~analyzing access to a data communication network by a user ~~(LAN)~~, comprising:

a processor; and

memory storing software code that, when executed by the processor, performs: ~~characterised by the fact that the system is configured to~~

trace ~~(A1)~~ ~~the~~ tracing traffic of said user ~~(LAN)~~:

and ~~identify~~identifying a group of networks with which ~~this~~ the traffic is mainly involved~~,~~ by ~~identifying (100)~~ relative autonomous ~~systems (AS)~~ and tracing the sequence of autonomous systems crossed by said traffic; ~~to trace said system the system including a first module (B1) that~~

~~provides the~~ providing a list ~~(102)~~ of paths of autonomous systems crossed by said traffic to reach each destination~~, and~~:

~~a second module (B2) to~~ aggregately ~~elaborate~~ elaborating said list of paths by outputting a tree representing all the paths of the autonomous systems crossed by the traffic of said user ~~(LAN)~~ to reach ~~all relative destinations~~ each destination; and

providing, in relation to the list of said autonomous systems crossed by said traffic of said user, at least one parameter including a percentage of use of the autonomous systems.

27. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~ wherein the ~~system~~ apparatus is configured to measure the routing of said traffic on ~~the~~ branches of said tree and associate respective indicative values of the traffic crossing the branch~~es~~ to the branches of said tree.

28. (Currently Amended) ~~System~~ An apparatus as per claim 26 ~~or claim 27, characterized by the fact that it comprises~~ comprising hardware probes to trace the traffic of said user.

29. (Currently Amended) ~~System~~ An apparatus as per claim 28, ~~characterised by the fact that~~ wherein said hardware probes are configured to supply information selected ~~in the group consisting of~~ from a group including: use of single link band, data volume, protocol-subdivision, IP address-subdivision, traffic matrix between the user ~~(LAN)~~ and the network.

30. (Currently Amended) ~~System~~ An apparatus as per claim 28 ~~or claim 29, characterized by the fact that~~ wherein said hardware probes are configured to determine at least one item selected ~~in the~~

~~group consisting of~~from a group including: sites most frequently visited by the user, main networks addressed by the user traffic, and origin of those who connect up to said user.

31. (Currently Amended) ~~System~~ An apparatus as per claim 26 ~~or claim 27~~, ~~characterized by the fact that it comprises~~comprising software agents on ~~the~~ a data communication network access router to trace ~~the~~ said traffic of the user.

32. (Currently Amended) ~~System~~ An apparatus as per claim 31, ~~characterised by the fact that~~wherein said software agents are configured to trace the traffic through the interface of the router of said user by determining ~~the~~ main traffic lines.

33. (Currently Amended) ~~System~~ An apparatus as per claim 31, ~~characterised by the fact that~~wherein said software agents are configured to perform an analysis on the operating status of the respective router in terms of CPU load and available memory.

34. (Currently Amended) ~~System~~ An apparatus as per claim 31, ~~characterised by the fact that it comprises~~comprising a target machine for ~~the transfer of the~~receiving statistics obtained by said routers.

35. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that it~~wherein the apparatus is configured to generate as ~~the~~ a result of said tracing operation of the traffic of said user at least one ~~of the parameters~~parameter selected from ~~the group consisting of~~a group including: destination networks of said traffic, percentage of traffic involved, pertinent autonomous system.

36. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~wherein said ~~module (A1) is~~apparatus is configured to input a file containing ~~the~~ IP addresses representing ~~the~~ destination sites most frequently visited by said user and to perform a tracing

operation ~~(traceroute) to this destination~~ for each destination site, by tracing the path to reach ~~this~~ each destination site.

37. (Currently Amended) ~~System~~ An apparatus as per claim 36, ~~characterised by the fact that~~ wherein said ~~first module~~ apparatus is configured to trace said path as a sequence of autonomous systems ~~(AS)~~ that are crossed.

38. (Currently Amended) ~~System~~ An apparatus as per claim 36, ~~characterised by the fact that~~ wherein said ~~first module~~ apparatus is configured to repeatedly perform said tracing operations with a given frequency.

39. (Currently Amended) ~~System~~ An apparatus as per claim 38, ~~characterised by the fact that~~ wherein said ~~first module~~ apparatus is configured so that said frequency can be determined and selected.

40. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~ wherein said ~~second module (B2)~~ apparatus is configured to output a unique tree of autonomous systems paths crossed by the traffic of said user to reach all the destinations, ~~the~~ and wherein leaves of said tree ~~being~~ are indicative of ~~the~~ destination subnetworks of the traffic of said user.

41. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~ wherein ~~said second module (B2) is configured to provide, in relation to the list of said autonomous systems crossed by said traffic of said user,~~ the provided at least one parameter ~~from: the percentage of use of the autonomous system,~~ further includes at least one of a value of time of permanence inside said autonomous systems and a value of hops inside said autonomous systems.

42. (Currently Amended)   ~~System~~ An apparatus as per claim 41, ~~characterised by the fact~~ ~~that~~wherein the ~~at least one and preferably all said data~~ provided at least one parameter ~~are~~ is expressed as an average value.

43. (Currently Amended)   ~~System~~ An apparatus as per claim 26 ~~or claim 36, characterized by the~~ ~~fact that~~ wherein said ~~first module (B1)~~ apparatus is configured to invoke for each IP address generated via said tracing ~~function (traceroute)~~, a remote service to obtain at least one ~~of the~~ ~~following piece~~ piece of information ~~included in the group consisting of~~ from a group including: name of the autonomous system to which the generated IP address belongs and number of the autonomous system to which the ~~aforesaid~~ generated IP address belongs.

44. (Currently Amended)   ~~System~~ An apparatus as per claim 43, ~~characterised by the fact~~ ~~that~~wherein said remote service is the *whois* service of the databases RIBE, ARIN, APNIC.

45. (Currently Amended)   ~~System~~ An apparatus as per claim 26, ~~characterised by the fact~~ ~~that~~wherein said ~~first module (B1)~~ apparatus outputs a data file ~~(103)~~ including information selected ~~in the group consisting of~~ from a group including:

   - order number of the autonomous system following the sequence of the IP addresses provided by said tracing function,

   - text name of the autonomous system,

   - identification number of the autonomous system,

   - number of hops that a single tracing command has measured inside the autonomous system, and

   - time of permanence in the autonomous system measured by a single tracing command.

46. (Currently Amended)   ~~System~~ An apparatus as per claim 26 ~~or claim 36, characterized by the~~ ~~fact that~~wherein said ~~first module~~ apparatus is configured to perform in parallel a plurality of said tracing functions.

47. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~ wherein said ~~second module (B2)~~ apparatus contains a cache memory to store information of correspondence between IP addresses and data relating to the ~~pertinent~~ autonomous systems.

48. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~ wherein said ~~second module~~ apparatus is configured so that ~~the~~ leaves of said tree are the destination subnetworks of the traffic of said user and ~~the~~ relative branches of said tree are the autonomous systems crossed by the traffic.

49. (Currently Amended) ~~System~~ An apparatus as per claim 26, ~~characterised by the fact that~~ wherein said ~~second module (B1)~~ apparatus is associated to one central memory with a data structure that represents the paths generated by said ~~first module~~ apparatus in the form of at least one aggregated list.

50. (Currently Amended) ~~System~~ An apparatus as per claim 49, ~~characterised by the fact that~~ ~~the~~ wherein said at least one aggregated list is identified as representing a variable number of autonomous system lists ~~(VAS)~~ that share a common maximum prefix.

51. (Currently Amended) ~~Computer program product~~ A memory having stored thereon ~~directly loadable in a numerical processor internal memory and including parts of~~ software code ~~to implement the procedure as per any one of the claims 1 to 25~~ that, when ~~the product is run on~~ executed ~~a processor,~~ performs:
        tracing traffic associated with a user of a data communication network;
        identifying a group of networks with which said traffic is mainly handled; and
        defining relative autonomous systems and tracing the sequence of autonomous systems crossed by said traffic,
        wherein the tracing includes:

- a first stage, to provide a list of paths of autonomous systems crossed by said traffic to reach each destination, and

- a second stage, to aggregately elaborate said list of paths, outputting a tree representing all the paths of the autonomous systems crossed by the traffic of said user to reach each destination,

wherein said second stage comprises providing, in relation to the list of said autonomous systems crossed by said traffic of said user, at least one parameter including the percentage of use of the autonomous systems.